

**New *Barrojuba* with a revised key to species  
(Coleoptera: Pselaphidae)<sup>1</sup>**

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*Abstract.*—Eight new species of the Neotropical genus *Barrojuba* are described: *simplicinota* n. sp. from Colombia; *pedunculata* n. sp. from Trinidad; and *lenticornis* n. sp., *simpliciventris* n. sp., *afoveata* n. sp., *plaumanni* n. sp., *prolongicornis* n. sp., and *campbelli* n. sp. from Brazil. Five of these new species have females associated with males, while females are not known for any of the previously described species. Characteristics of the genus are noted, and a key to the fourteen species now included in the genus is presented. New records for *albertae* Park, *tuberosa* Chandler, and *varia* Chandler are included. Members of the genus have now been collected from southern Mexico to southern Brazil.

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Subsequent to my revision of *Barrojuba* (Chandler 1983), I had the opportunity to sort the large pselaphid collections of three North American institutions and discovered eight undescribed species belonging to this genus. Five of these have females associated with them, while females were unknown for the six species covered in my earlier paper. Previously the genus was known only from Panama, with the new species and records in this paper extending the range from southern Mexico to southern Brazil. The new species are described, a revised key to the species of the genus is presented, and new records for three other species are included.

Members of *Barrojuba* are readily recognized among the Jubini by the lack of vertexal foveae and sulci, and the incomplete transverse antebasal sulcus of the pronotum. Members of the genus are further distinguished by the baso-medial pair of foveae on tergites II–IV and sternites II–V. I have not seen these particular foveae present in members of any other genus in the tribe. These foveae are only readily visible on cleared specimens mounted on slides. Males have large eyes of 35–60 facets, an elongate antennal club of 4–5 flagellomeres, and the antebasal area of the pronotum is impressed and often tuberculate. Females have 5–10 facets forming the eyes, a comparatively much shorter 3–4 segmented antennal club (one segment less than that of their respective males, except possibly in *pedunculata* n. sp.), and the antebasal area of the pronotum has only a feeble medial remnant of the transverse sulcus present. At this time only males may be identified to species.

All measurements are in millimeters. Descriptions are compiled from cleared, disarticulated specimens on slides, and from specimens on points. Holotypes are cleared, disarticulated, and mounted on slides in Canada balsam. Deposition of specimens are indicated by the following acronyms:

- CNCI. Canadian National Collection of Insects, Ottawa, Canada.  
DSC. Private collection of author, Durham, NH.

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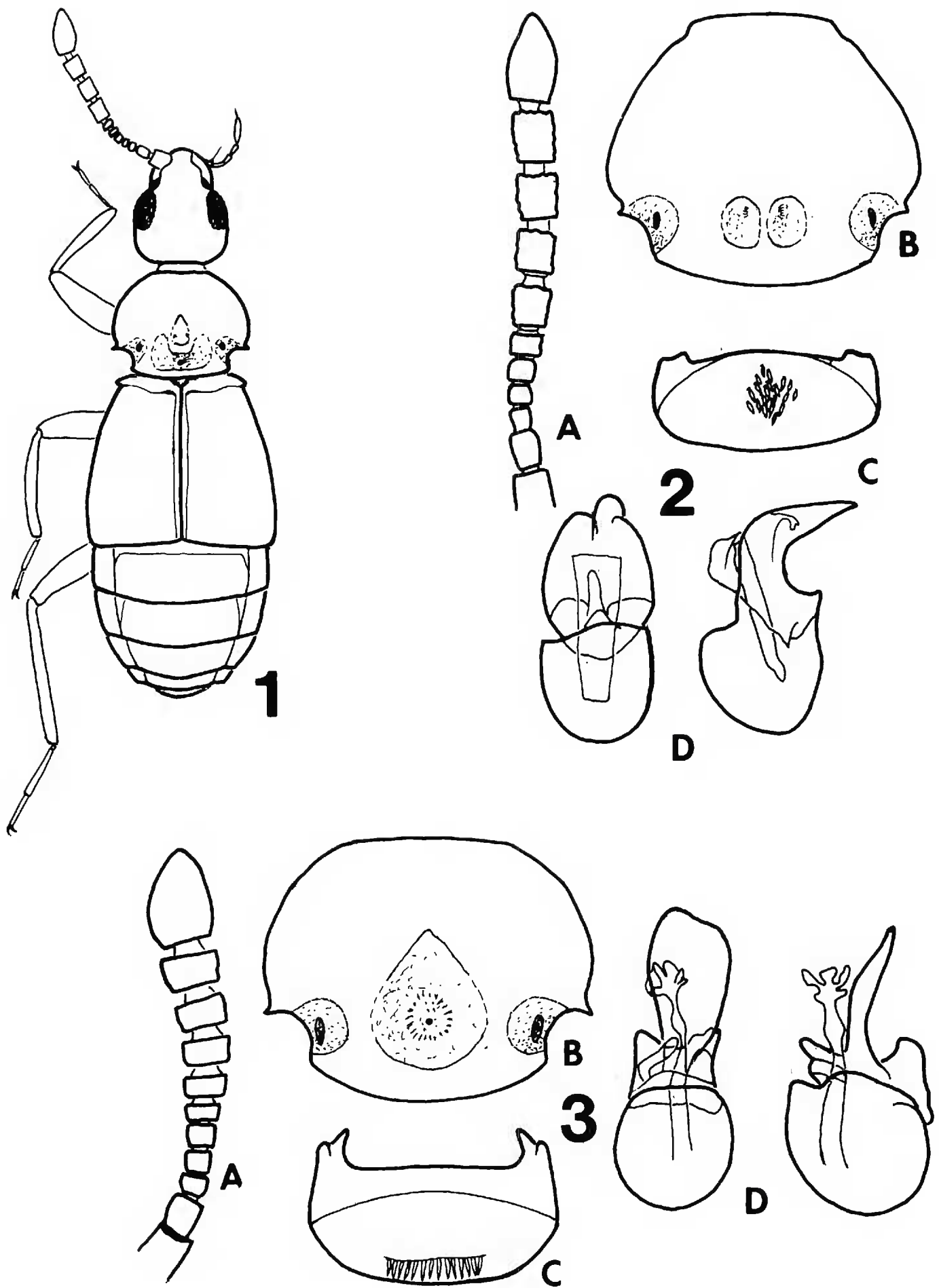


Fig. 1. Dorsal view *Barrojuba albertae*. Figs. 2-3. A dorsal view antenna; B, dorsal view pronotum; C, ventral view sternite VI; D, dorsal and left lateral view aedeagus; 2. *B. simplicinota*; 3. *B. lenticornis*

FMNH. Field Museum of Natural History, Chicago, IL.

MCZC. Museum of Comparative Zoology, Cambridge, MA.

### Key to males of *Barrojuba*

Males may be recognized by the large eyes (35–60 facets), depression and/or tubercle in the antebasal region of the pronotum, and the impression of sternite VI. In females the eyes are small (5–10 facets), the antebasal region of the pronotum bears only a slight medial remnant of the antebasal sulcus, and all sternites are convex.

1. Antennal club formed by apical five flagellomeres, flagellomere V at least half again as long as IV (Fig. 2A) ..... 2  
 Antennal club formed by apical four flagellomeres, V and IV subequal in length (Fig. 6A) ..... 5
2. (1) Tubercle in antebasal impression with tuft of setae at apex, tubercle visible in lateral view (Fig. 1, Chandler 1983) ..... 3  
 Tubercle barely developed in antebasal impression and lacking apical tuft of setae, or tubercle absent, tubercle not visible in lateral view ..... 4
3. (2) Flagellomere V longer than wide; pronotal tubercle barely visible in lateral view (Fig. 1, Chandler 1983); Panama ..... *uliginosa* Chandler  
 Flagellomere V transverse; pronotal tubercle easily visible in lateral view (Fig. 2, Chandler 1983); Mexico to Panama ..... *tuberosa* Chandler
4. (2) Flagellomeres V–VIII elongate (Fig. 2A); pronotum with paired weak antebasal impressions (Fig. 2B); Colombia ..... *simplicinota* n. sp.  
 Flagellomeres V–VIII transverse (Fig. 3A); pronotum with distinct circular antebasal impression (Fig. 3B); Brazil ..... *lenticornis* n. sp.
5. (1) Flagellomere VI with widest portion as long as wide or longer (Fig. 5A) ..... 6  
 Flagellomere VI with widest portion clearly transverse (Fig. 7A) ... 10
6. (5) Pronotum with prominent acute tubercle on anterior margin of antebasal impression (Fig. 5B); Brazil ..... *simpliciventris* n. sp.  
 Pronotum with tubercle on posterior margin of antebasal impression, or inconspicuous ..... 7
7. (6) Sternites III–V narrowly flattened medially; pronotum with vague bituberculate rhomboidal raised area on anterior margin of antebasal impression, setate tubercle near posterior margin of impression and inconspicuous, bearing a single seta; flagellomere VI only slightly longer than wide (Fig. 1); Panama ..... *albertae* Park  
 Sternites III–V widely flattened or impressed; pronotal modifications of antebasal impression absent or different, tubercle easily visible, bearing tuft of setae at apex; flagellomere VI twice as long as wide (Fig. 6, Chandler 1983) ..... 8
8. (7) Pronotum with antero-medial margin of antebasal impression slightly gibbous, longest setae on disc originating from this area (Fig. 6, Chandler 1983); Panama ..... *gibbosa* Chandler  
 Pronotum lacking any development of anterior margin of antebasal impression, longest setae over basal half of pronotum ..... 9

9. (8) Sternite VI with preapical row of pointed setae (Fig. 5, Chandler 1983); Panama . . . . . *woldai* Chandler  
Sternite VI with preapical row of rectangular setae (Fig. 4, Chandler 1983) . . . . . *varia* Chandler
10. (5) Pronotum with stout pedunculate tubercle near middle of circular impression, tubercle lacking apical tuft of setae (Fig. 4B); Trinidad . . . . .  
. . . . . *pedunculata* n. sp.  
Pronotum with tubercle on anterior margin of vague U or Y-shaped antebasal impression (Figs. 6B, 7B), tubercle with apical tuft of setae . . . 11
11. (10) Pronotum with broad prominent tubercle, posterior face granulate (Fig. 6B); Brazil . . . . . *afoveata* n. sp.  
Pronotum with conical tubercle, posterior face not granulate (Fig. 7B) . . . . . 12
12. (11) Pronotum with conspicuous punctures, separation of punctures about equal to puncture diameter; body length greater than 2.1 mm; Brazil . . . . .  
. . . . . *plaumanni* n. sp.  
Pronotum with punctures closer and indistinct; body length less than 1.9 mm . . . . . 13
13. (12) Sternite VI with two preapical rows of short flattened setae interrupted at middle (Fig. 9C); Brazil . . . . . *campbelli* n. sp.  
Sternite VI with uninterrupted medial row of long flattened setae (Fig. 8C); Brazil . . . . . *prolongicornis* n. sp.

***Barrojuba simplicinota* n. sp.**

(Fig. 2)

Length 2.55. Males with head densely and coarsely punctate, pronotum less densely punctate; eyes with about 60 facets, antennal club 4-segmented, flagellomere V twice as long as IV; pronotum with two shallow antebasal impressions, lacking medial tubercle; sternites II–V convex, VI with transverse impression, cluster of large flattened setae at center of impression.

Females unknown.

Male holotype: head 0.48 long, flagellomere IV 0.05 long, 0.05 wide, V 0.09 long, 0.06 wide; pronotum 0.46 long, 0.53 at widest point; elytra 0.78 long; aedeagus 0.21 long.

Specimen examined: HOLOTYPE male, COLOMBIA, Cundinamarca, Tequendamá, 7600', VII–6–1970, J. M. Campbell (CNCI). The name is derived from the relatively simple pronotal modifications.

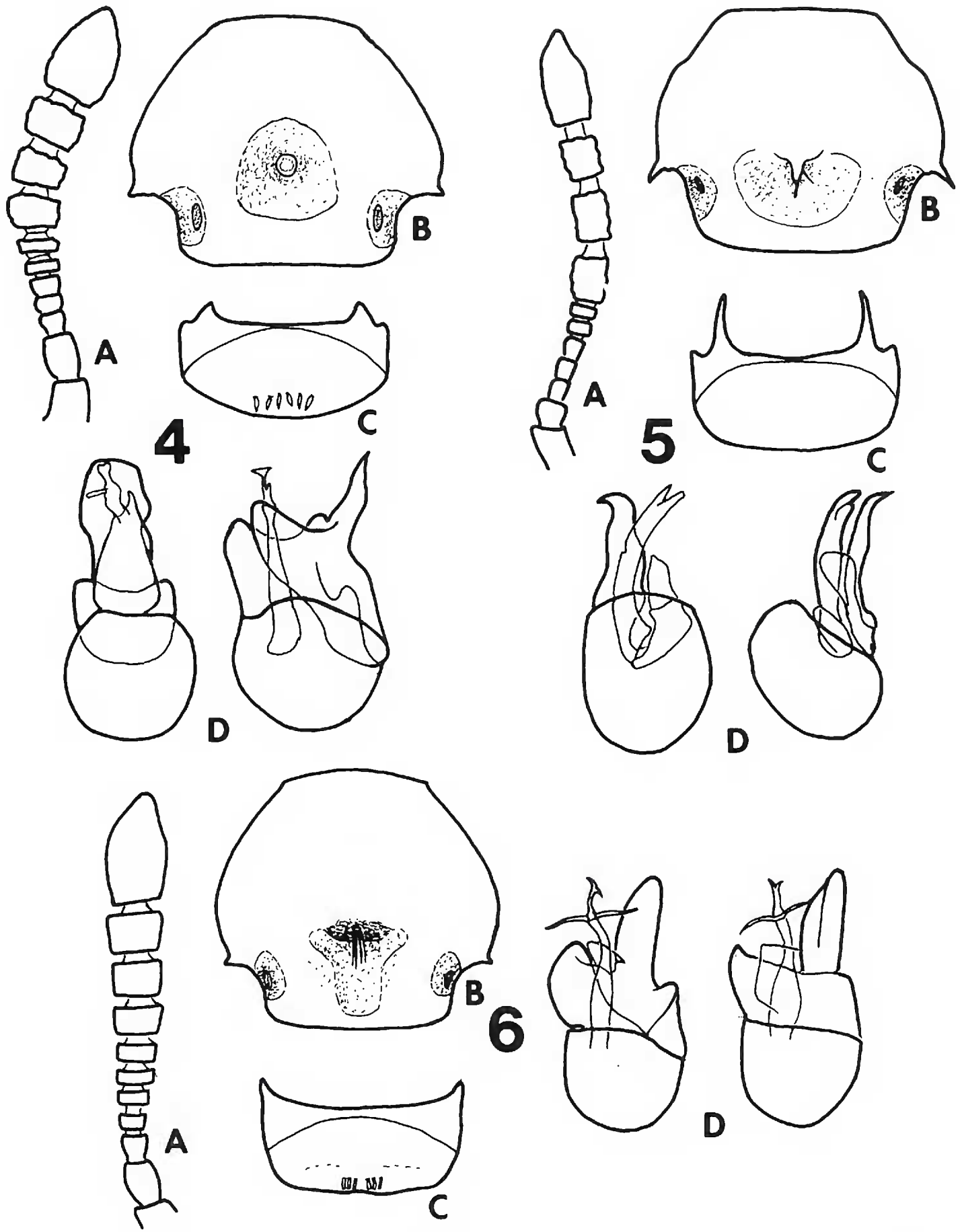
Comments: *Simplicinota* is similar to *uliginosa* and *tuberosa* in the antennal club of five elongate flagellomeres, but is readily separated by the lack of a pronotal tubercle, the loosely clumped flattened setae of sternite VI, and the simple rather than lobed penis apex.

***Barrojuba lenticornis* n. sp.**

(Fig. 3)

Length 1.80. Males with head and pronotum densely and smoothly punctate; eyes with about 50 facets, antennal club 5-segmented, flagellomere IV two-thirds as long as V; pronotum with rounded rhomboidal impression, small tubercle at center of im-





Figs. 4-6. A, dorsal view antenna; B, dorsal view pronotum; C, ventral view sternite VI; D, dorsal and left lateral view aedeagus; 4. *B. pedunculata*; 5. *B. simpliciventris*; 6. *B. afoveata*.

pression lacking apical setae; sternite III medially flattened, IV–V medially impressed, VI with deep transverse impression, with preapical row of flattened pointed setae.

Females with sculpture of head and pronotum similar, eyes with 5 facets, antennal club 4-segmented, flagellomere VI twice as long as V; sternites convex.

Male holotype: head 0.32 long, flagellomere V 0.03 long, 0.05 wide, VI 0.05 long, 0.06 wide; pronotum 0.35 long, 0.44 at widest point; elytra 0.60 long; aedeagus 0.22 long.

Specimens examined, 2: HOLOTYPE male, BRAZIL, Amazonas, Floresta de Tijuca, Guanabara, II–1960, C. A. Campos Seabra (FMNH). PARATYPE: 1 female, eutopotypical (FMNH). The name is derived from the form of the apical flagellomeres.

Comments: Distinct among the species with an antennal club of five flagellomeres, by the small size, transverse apical flagellomeres, and the short asetate pronotal tubercle. *B. uliginosa* is perhaps most similar by the short setate pronotal tubercle, sternite VI with a transverse row of flattened setae, and the penis apex with a series of small lobes.

***Barrojuba pedunculata* n. sp.**

(Fig. 4)

Length 1.35–1.57. Head densely punctate, rugosely sculptured, pronotum less densely punctured; eyes with about 45 facets, antennal club apparently 4-segmented, flagellomere VI twice as long as V; pronotum with distinct circular antebasal impression, with short pedunculate tubercle near middle; sternites II–V convex, VI transversely impressed, with a few large pointed setae in preapical transverse row.

Females with antennal club 4-segmented, flagellomere V less than half length of VI, eyes with 5–6 facets; pronotal disc smoothly convex, lacking antebasal modifications, weak transverse antebasal sulcus present only medially; all sternites convex.

Male holotype: head 0.27 long, flagellomere V 0.03 long, 0.05 wide, VI 0.05 long, 0.06 wide; pronotum 0.31 long, 0.39 at widest point; elytra 0.48 long; aedeagus 0.12 long.

Specimens examined, 7: HOLOTYPE male, TRINIDAD, Curepe, XI–28/29–1937, W. R. M. Mason (CNCI). PARATYPES: all from Trinidad, 2 males, 2 females, St. Augustine, VII–17–1935, VIII–3–1935 (2), IX–24–1935, N. A. Weber (DSC, MCZC); 1 female, Narriva Swamp, XII–5–1935, N. A. Weber, rainforest (MCZC); 1 female, Rocks off Galera Point, V–19–1935, N. A. Weber (MCZC). The name is derived from the form of the pronotal tubercle.

Comments: This species is best placed in the group with five flagellomeres in the male antennal club, since the female has a 4-segmented club. Male flagellomere V is definitely wider than IV, but only half the length of VI, which gives a 4-segmented appearance with flagellomere V wide enough but not long enough to be included. *Pedunculata* shares with *lenticornis* the asetate tubercle centered in the pronotal impression, transverse flagellomeres forming the antennal club, transverse row of pointed setae on sternite VI, and the apical lobes of the penis. The larger, pedunculate pronotal tubercle and shorter flagellomere V serve to separate this species from any others.

*Barrojuba simpliciventris* n. sp.

(Fig. 5)

Length 1.59. Males with head densely and coarsely punctate, pronotum less densely and coarsely punctate; eyes with about 60 facets, antennal club 4-segmented, V one-third length of VI, vertexal foveae indented between antennal bases and eyes, forming basally constricted antennal rostrum; pronotum with broad U-shaped antebasal impression, sharp tubercle on anterior margin bearing spine at apex; sternites II–V convex, VI transversely impressed, lacking modified setae.

Females unknown.

Male holotype: head 0.27 long, flagellomere V 0.03 long, 0.04 wide, VI 0.09 long, 0.05 wide; pronotum 0.29 long, 0.36 at widest point; elytra 0.48 long; aedeagus 0.22 long.

Specimen examined: HOLOTYPE male, BRAZIL, Para, Belem, IPEAN, III–23–1970, J. M. & B. A. Campbell (CNCI). The name is derived from the simple last sternite.

Comments: *Simpliciventris* shares with *campbelli* the pronotal tubercle on the anterior margin of the impression, and the general form of the simple aedeagus. It is readily separated from *campbelli* by the elongate flagellomeres of the antennal club, and the lack of any modified setae on sternite VI.

*Barrojuba afoveata* n. sp.

(Fig. 6)

Length 1.98–2.22. Males with head coarsely and closely punctate, rugulose, pronotum smoothly rugulose; eyes with 35–45 facets, antennal club 4-segmented, flagellomere VI twice as long as V; pronotum with quadrate tubercle on anterior margin of weakly defined Y-shaped antebasal impression, posterior face of tubercle granulate, bearing subapical tuft of setae angled posteriorly; sternites III–V lightly flattened at middle, VI transversely impressed, with preapical row of large rectangular setae interrupted at middle.

Females with antennal club 3-segmented, flagellomeres VII–VIII each twice as long as VI, eyes with about 8 facets; pronotal disc smoothly convex, lacking antebasal modifications, weak transverse antebasal sulcus present only medially; all sternites convex.

Male holotype: head 0.42 long, flagellomere V 0.04 long, 0.06 wide, VI 0.06 long, 0.07 wide; pronotum 0.40 long, 0.49 at widest point; elytra 0.63 long; aedeagus 0.16 long.

Specimens examined, 61: HOLOTYPE male, BRAZIL, Santa Catarina, Nova Teutonia, VII–1957, F. Plaumann (FMNH). PARATYPES: 22 males, 31 females, same data except dates from VIII–1953 to X–1957 (DSC, FMNH); 1 male, 1 female, Iramy, VII–1958, F. Plaumann (FMNH); 4 females, Seara, VIII–1958, F. Plaumann (FMNH). One female specimen bears an additional label, “ex: berlese leafmold.” The name is derived from the manuscript name of Orlando Park for this species.

Comments: *Afoveata* is placed near the group of species with the 4-segmented antennal club formed by transverse flagellomeres, and the setate tubercle on the anterior margin of the pronotal impression. However, it is readily distinguished by the broad rather than conical pronotal tubercle, the medially divided row of setae on sternite VI, and the apical lobes of the penis.



***Barrojuba plaumanni* n. sp.**

(Fig. 7)

Length 2.13–2.37. Males with head coarsely and densely punctate, pronotum with moderately dense umbilicate punctures; eyes with about 45 facets, antennal club 4-segmented, VI over twice as long as V; pronotum with shallow U-shaped antebasal impression, with stout tubercle on anterior margin bearing tuft of setae at apex; sternites II–V convex, VI transversely impressed, with medial transverse row of acute large flattened setae.

Females with sculpture of head and pronotum similar to males; antennal club 3-segmented, eyes with 6 facets; pronotum with indistinct transverse impression at middle near base; sternites convex.

Male holotype: head 0.39 long, flagellomere V 0.04 long, 0.06 wide, VI 0.08 long, 0.07 wide; pronotum 0.44 long, 0.51 at widest point; elytra 0.66 long; aedeagus 0.25 long.

Specimens examined, 2: HOLOTYPE male, BRAZIL, Santa Catarina, Nova Teutonia, 27°11', 52°23', 770 m, I-1977, F. Plaumann (MCZC). PARATYPE: 1 female, eutopotypical (MCZC). The name is proposed in honor of the collector of the type series.

Comments: Placed near *campbelli* and *prolongicornis* by the transverse flagellomeres of the 4-segmented and antennal club, and the setate tubercle on the anterior margin of the pronotal impression. *Plaumanni* is perhaps closest to *campbelli* by sharing the medial row of pointed setae on sternite VI, and is distinguished by the larger body size and form of the aedeagus.

***Barrojuba prolongicornis* n. sp.**

(Fig. 8)

Length 1.62–1.83. Males with head closely and coarsely punctate, pronotum feebly and sparsely punctate; eyes with about 60 facets, antennal club 4-segmented, flagellomere VI twice as long as V; pronotum with short tubercle projecting posteriorly on anterior margin of deep transverse impression, tubercle with short tuft of setae at apex; sternites III–V smoothly convex, VI transversely impressed, with irregular row of large pointed setae near apex.

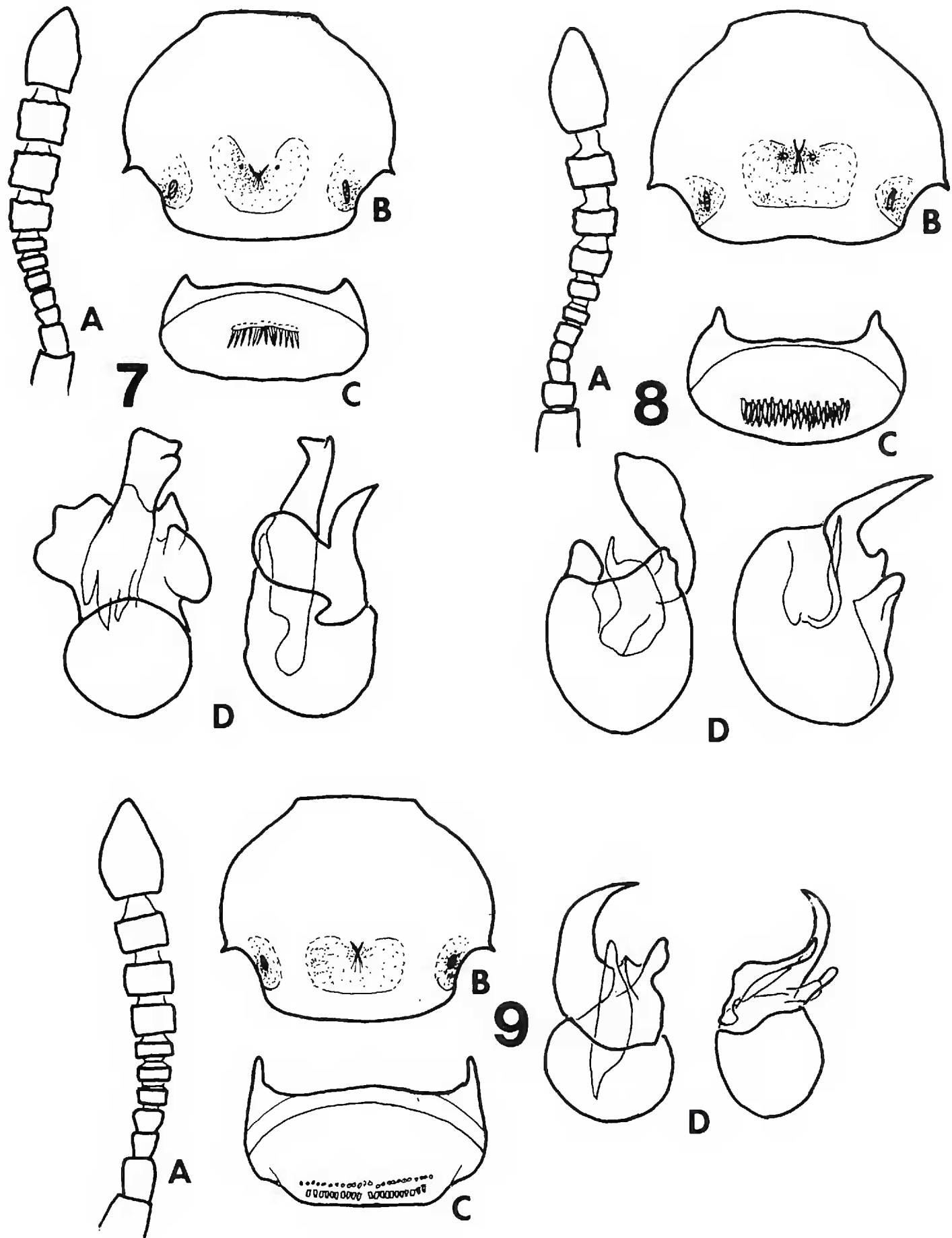
Female with similar sculpture of head and pronotum; eyes with five facets, antennal club 3-segmented, flagellomere VII twice as long as VI; pronotum with antebasal sulcus restricted to weak medial V-shaped impression; sternites convex.

Male holotype: head 0.27 long, flagellomere V 0.02 long, 0.04 wide, VI 0.05 long, 0.05 wide; pronotum 0.26 long, 0.34 at widest point; elytra 0.44 long; aedeagus 0.18 long.

Specimens examined, 3: HOLOTYPE male, BRAZIL, D. F. (now Rio de Janeiro), Corcovado, Rio de J(aneiro), VIII-18-1946 (FMNH). PARATYPES: 1 male, 1 female, Sao Paulo, Caraguatatuba, I-29/30-1970, J. M. & B. A. Campbell (CNCI). The name is derived from the apically produced terminal flagellomeres.

Comments: *Prolongicornis* shares with *plaumanni* and *campbelli* the transverse flagellomeres of the 4-segmented antennal club, and the acute setate tubercle on the anterior margin of the pronotal impression. It is closest in size to *campbelli*, but is most similar to the larger species, *plaumanni*, by the medial row of long acute setae on sternite VI.





Figs. 7-9. A, dorsal view antenna; B, dorsal view pronotum; C, ventral view sternite VI; D, dorsal and left lateral view aedeagus; 7, *B. plaumanni*; 8, *B. prolongicornis*; 9, *B. campbelli*.

***Barrojuba campbelli* n. sp.**

(Fig. 9)

Length 1.74. Males with head smoothly and rugosely punctate, pronotum with less dense and weak punctation; eyes with 40 facets, antennal club 4-segmented, VI almost twice as long as V; pronotum with shallow U-shaped antebasal impression, with short blunt tubercle on anterior margin bearing apical tuft of setae; sternite V lightly

flattened at middle, VI transversely impressed, with subapical row of short flattened setae briefly interrupted medially.

Females unknown.

Male holotype: head 0.31 long, flagellomere V 0.03 long, 0.05 wide, VI 0.05 long, 0.06 wide; pronotum 0.33 long, 0.41 at widest point; elytra 0.51 long; aedeagus 0.21 long.

Specimen examined: HOLOTYPE male, BRAZIL, Parana, Alexandra, 20 km W Paranagua, 80 m, II-13-1970, J. M. & B. A. Campbell (CNCI). The name is proposed in honor of the collector of the holotype.

Comments: Near *plaumanni* and *prolongicornis* by sharing the features discussed under those two species. Closest in body size to *prolongicornis*, but separated from both species by the two preapical rows of short setae on sternite VI.

### New Records

#### *Barrojuba albertae* Park

PANAMA: *Bocas del Toro*, Almirante, III-27-1959, H. S. Dybas, berlese conc. floor litter (FMNH).

#### *Barrojuba tuberosa* Chandler

PANAMA: *Chiriqui*, 24 km NNE San Felix, 81°50', 8°50', 1300 m, VI-24-1980, J. A. Wagner, berlese floor litter & root mat (FMNH). MEXICO: *Chiapas*, Finca Esperanza, 710 m, IV-12-1938, R. Nettel, at light (FMNH). *Veracruz*, 2 mi S Acayucan, Rd. 185, VII-10-1962, J. M. Campbell (CNCI).

#### *Barrojuba varia* Chandler

PANAMA: *Chiriqui*, Boquete, X-2-1975, D. S. Chandler, sift coffee tree litter (DSC).

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### LITERATURE CITED

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